

**PATENT ABSTRACTS OF JAPAN**(11)Publication number : **2000-247746**(43)Date of publication of application : **12.09.2000**

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**C04B 35/583****B23C 5/16**(21)Application number : **11-051242**(71)Applicant : **KYOCERA CORP**(22)Date of filing : **26.02.1999**(72)Inventor : **NODA KENJI****(54) CUTTING TOOL OF CUBIC BORON NITRIDE-BASED SINTERED COMPACT**

(57)Abstract:

**PROBLEM TO BE SOLVED:** To provide a high-performance cutting tool of a cubic boron nitride-based sintered compact without falling off of cBN grains during the cutting of high-hardness quenched steel or cast iron or causing wearing out or deficiency of the tool due to the wearing out or falling off of a binder while retaining mechanical and thermal characteristics.

**SOLUTION:** This cubic boron nitride-based sintered compact is composed of a cubic boron nitride-based sintered compact containing 30-90 vol.% of a fine granular cubic boron nitride having  $\leq 1 \mu\text{m}$  average grain diameter and 10-70 vol.% of coarse granular cubic boron nitride having 2-10  $\mu\text{m}$  average grain diameter and further containing AlN and Al<sub>2</sub>O<sub>3</sub> in a binder. Furthermore, the sintered compact has both the ratio (I1/I2) of the first peak intensity (I1) of a boride containing a group 4a, 5a or 6a element of the periodic table to the first peak intensity (I2) of the cubic boron nitride and the ratio (I1/I3) of the first peak intensity (I1) to the first peak intensity (I3) of a nonborided compound containing the above element within the range of 0.05-0.5 in an X-ray diffractometric measurement using K $\alpha$ 1 radiation of Cu.

**LEGAL STATUS**

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